

JPRS 79428

12 November 1981

USSR Report

ENERGY

No. 80

FBIS

FOREIGN BROADCAST INFORMATION SERVICE

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ELECTRIC POWER

FINNISH PAPER REPORTS NUCLEAR WASTE SENT FROM LOVIISA PLANT TO USSR

Helsinki HELSINGIN SANOMAT in Finnish 16 Aug 81 p 23, 19 Aug 81 p 8

[Article by Risto Valkeapaa: "Nuclear Waste to be Transported Secretly Across the Border"]

[Text] Finland's most closely guarded secret is the moment when the nuclear waste from the Loviisa Nuclear Power Plant will leave the island of Hastholmen on its return trip to the Soviet Union.

A year has been spent in the preparation of this first return trip or shipment of used nuclear fuel. Recently almost any day has been predicted as the departure date, even this Sunday morning.

The risk studies and theoretical calculations concerning the possibility of an accident have been completed. The transport equipment has been put in order and tested for several weeks. The transport route from Loviisa to Vainikkala has been tested and rescue plans have been prepared along the route. Fire chiefs along the route in residential areas will be on their toes when this first special shipment passes by.

The train that will transport the nuclear waste will travel a slow 15 kilometers per hour through Loviisa, Lahti, Kouvola, and Lappeenranta. The preparations have been thorough and unprecedented, but nearly one-fourth of Finland and hundreds of thousands of people will be made subject to risk.

The shipment is considered to be so safe and will move in the vicinity of so few people that there is no desire to let the public know of it according to Imatra Power. It is expected that the whole shipment will be handled with very little attention brought to it.

The most important reason for the top secrecy of this matter is, however, the fact that nothing or no one should cause any problems or delays while 14 tons of spent nuclear fuel are transported by highway and rail from the island of Hastholmen to Viipuri [Vyborg].

Departure Only in Need of Permission

The transport containers for transporting the nuclear waste along the highway will be brought from the island of Hastholmen to the train station in Loviisa where the containers will be transferred to a special Soviet train. The remainder of the trip will be by rail.

The special train for transporting the fuel arrived in Loviisa at the end of July. Upon arrival defects were found in the transport containers in the water pipes along the bottom or in the welded joints connecting the bottom plugs. Atomenergoexport [All-Union Institute for the Export of Nuclear Energy] fixed the defects in the bottom plugs and the containers were declared to be safe for loading with fuel rod clusters at the power plant. Defects were also found this week in the carriages of the transport trucks. On Thursday Imatra Power reported that their repair will take several days. After the repair, loading, and examination of the containers the only thing that remains to be done is to obtain permission from the Radiation Safety Institute.

The first "sweaty" shipment from Loviisa's Hastholmen Island to the train station in Loviisa, where the special Soviet train is located, will be taken care of by special drivers Keijo Pyyhtia and Hannu Karvinen. The length of the trip is approximately 16 kilometers.

The transport equipment is comprised of two heavy-duty, English-made, 370-horse power trucks normally used for transporting electric transformers. Transfer carriages, onto to which the nuclear waste containers will be lifted, will to attached to the back of them.

Pyyhtia's and Karvinen's job is to drive the containers one at a time from Hastholmen to the railroad yard located in the center of Loviisa.

This special shipment of nuclear waste will be no different than any other cargo for these professional drivers. They say that they understand very well the importance of this shipment. "The concern of others has not, however, increased the pressure," argues Keijo Pyyhtia, 38 and a bachelor.

But it is certain that even these professional drivers will feel better after the load has been safely delivered to the railroad yard in Loviisa.

Risk of Accident Calculated to be Small

Preparations for the transfer of this nuclear waste have been going on for a long time already. Imatra Power had the State Technical Research Institute conduct a risk study in 1979. It was accomplished according to the requirements.

In this risk study the average person is concerned by the information that in the worst possible case an individual can receive a radiation dosage of 1.6 rem if he remains in the vicinity of the accident for 10 days. According to the law and security stipulations the highest allowable annual dosage for a worker is 5 rem at this time.

In the summary of the risk study it was confirmed that the theoretical possibility of an accident is one in 500,000 years if two shipments are made every year. Statistics on accidents served as the basis of this theoretical calculation.

Railroad grade crossings, of which there are several between Loviisa and Viipuri, are considered to be the worst spots during the transporting of the nuclear fuel.

All in all, the risk study evaluated the risks to be quite small. In evaluating risks it must also be taken into consideration that special care must be taken in making preparations for the shipment. The State Railroads arranged an undisturbed schedule for the shipment, among other things.

An Atomic Age Train on an Age Old Route

However, the State Railroads has not won everyone's endearment. The city of Loviisa has sharply criticized the condition of the railroad track between Loviisa and Lahti. This section of the track is the weakest link in this shipment. This atomic age cargo will be carried on rail laid in the 1920's. The 15-ton axle weight of the special train carrying the spent fuel is approaching the 17-ton weight limit of the track.

"What if the load ends up in the ditch between Loviisa and Lahti?" is the question of Chairman Martti-Ragnar Nordstrom of the Loviisa Port Authority and city fathers to the State Railroads:

"Since the track must be repaired sometime, why not repair it now since its condition is especially significant to this shipment and the country?"

"The State Railroads assures us that the track will hold up. In any case the special train will travel the route at a very slow speed. Its speed will be only 15 kilometers per hour.

This special shipment has now forced even the railroad administration "to see" the poor condition of old tracks, such as the Loviisa track.

The State Railroads has become aware of the poor condition in which their tracks are. They should be repaired as soon as possible," states State Railroads Director Herbert Romer.

According to Romer the track between Loviisa and Lahti is not in any way in an exceptional position as far as little used older tracks are concerned. Its condition will also be improved only when railroad tracks are to be repaired at a more rapid rate throughout the whole country.

Defects in Containers Accidentally Made Public

The individual who did a poor job of welding the water pipes and the bottom plugs of the transport containers also did not win anyone's praise.

Atomenergoexport has now repaired the defects observed in the examination conducted by the Finns. Imatra Power can now report that there are no defects in the containers. This is what it has said all along.

However, the defects were "accidentally" made public when the bottom of one of the containers was covered with plastic at the railroad station in Loviisa. The plastic was taped up to protect two fist-sized radiating spots. The nuclear power people were talking about surface contamination.

Since radiation fuel is normally inside the container, one can assume that any surface contamination is from within the container. The bottom plug of the container with the protective covering had simply leaked and active water had dripped onto the outer surface.

At the Radiation Safety Institute the leaking of the bottom plug is considered to be the probable explanation for the activity appearing on the bottom surface of the container.

Otherwise the containers have met Finnish requirements rather well. Ultrasonic measurements and inspections did not reveal anything significant.

Containers to be Sealed

Precise security measures will be applied with respect to nearly all of the operations connected with the return of the fuel. The Radiation Safety Institute will supervise the operation from the beginning to the end. Also the transport containers will require the approval of the Radiation Safety Institute.

The fuel rod clusters will be transferred within the nuclear power plant to the supervision of the Radiation Safety Institute. The clusters will be transferred to the transport containers in tanks under water in the storage area for used fuel.

Before the lid of the transport container is bolted shut a representative of the Radiation Safety Institute will inspect the characteristics and the quantity of the clusters. The bolted lid will be sealed.

"When the fuel rod clusters are from all respects ready in the container, the water will be drained from the container and will be replaced with nitrogen," states Antero Tamminen, chief of the Loviisa Plant's technical group.

The fuel that will now be transferred was taken from the Loviisa I reactor 3 years ago. It continues to produce enough heat for a small sauna and raises the temperature of the nitrogen surrounding it to more than 100 degrees.

The filled container will be allowed to equalize itself before it is transported. During shipment the pressure will be nearly the same as that of a hard motor vehicle tire, or approximately 2 baria.

If one were to touch the surface of the filled container, one's fingers would not be burned. The temperature of the outer surface is approximately 40 degrees, and the cooling ridges on the surface of the container facilitate heat transfer.

According to the Radiation Safety Institute it is not dangerous to be near the filled containers.

Side Streets to the Railroad Yard

The commencement of the shipment will mean that traffic will have to be regulated on the main roads. The distance from the plant to the railroad yard is approximately 16 kilometers.

The traffic dividers along the route from Hastholmen to Loviisa station have from the very beginning been made so that they can be moved. The only thing that needs to be done at the crossing of highway 7 and the road coming from the power plant is to carry the concrete markers out of the path of the trucks carrying the nuclear waste.

The cargo will travel along the highway at approximately 20 kilometers per hour under strict supervision. In addition to the drivers, there will be approximately five individuals in the truck engaged in supervision work. The shipment will also be accompanied by a convoy of several individuals.

In the center of Loviisa the cargo of nuclear waste will travel through town along Mannerheim Street. Before it reaches the railroad yard it will also have to follow side streets. The route has been tested previously so that there should be no surprises.

The approximately 4-meter high and 83-ton containers will be transferred to a special train with a 200-ton crane, which has been used in connection with other large shipments for Imatra Power.

In addition to the poor condition of the railroad track between Loviisa and Lahti, the more significant points along the railroad track are in the center of Lahti where an accident would cause the most extensive radiation effects on the population. In practice the most extensive rescue plans are needed in Lahti.

Another Shipment Next Year

The shipment will travel 16 meters above the surface of Kymi River on the Korja Bridge at Elimäki. The container has been designed to resist a possible drop into water even from this height. In tests corresponding models of containers have been dropped 15 meters on to hard ground.

According to the norms the container should withstand a drop of 9 meters on to hard ground. It should stay airtight for 8 hours in water at a depth of 15 meters. In fire the container should last 30 minutes in a temperature of 800 degrees Celsius.

Kouvola is also a significant point along the transportation route. The undisturbed schedule arranged by the State Railroads at this junction will come to a test.

According to the nuclear waste agreement the Finns will transport the nuclear waste all the way to Viipuri where it will be turned over to Soviet authorities.

This first shipment of spent nuclear fuel will be a demanding and complex operation for the Finns. Real problems caused by nuclear waste will not begin until after Viipuri. The Soviets must resolve the final disposition of spent fuel which will remain active for tens of thousands of years.

The next shipment of used nuclear fuel from Finland to the Soviet Union will be made next year. There will be no shipments of waste in the next 2 years. The pause is a result of the fact that the spent fuel from the reactors in 1980 and after that must cool off for 5 years in Loviisa. Beginning in 1985, 28 tons of spent fuel will be transferred from Loviisa to the Soviet Union annually.

[19 Aug 81 p 8]

Nuclear Waste Was Loaded During the Night

The atomic train loaded with spent fuel from the Loviisa I Nuclear Power Plant began its journey from Loviisa station to Viipuri on Tuesday evening just a little before 7:00 o'clock. From Loviisa to Lahti the train will travel at a speed of 15 kilometers per hour since the track on this section is in poor condition and the axle weight of the train is close to the weight limit of the track.

The first shipment of nuclear waste to the Soviet Union will travel from Loviisa to Viipuri via Lahti, Kouvola, and Vainikkala. The train will reach Vainikkala early Wednesday morning.

Rescue plans were made in advance along the route in the event of a possible accident.

All four nuclear waste containers were transferred one at a time from the atomic island of Hastholmen to Loviisa railroad station during the night between Monday evening and Tuesday morning.

The transporting of the nuclear waste along the highway took place without incident, and no dangerous situations occurred even in the center of Loviisa where the final route left Mannerheim Street to wind along side streets. The police kept the route secure along the way.

Time of Departure Kept a Secret

Imatra Power kept the departure time of the nuclear train as well as the transport along the highway secret until the last minute. Police Inspector Ruben Hindsberg states that Loviisa police, who participated in the transporting of the nuclear waste along the highway, learned about their duties only a few hours before.

The postponement of information concerning the operation to the police caused difficulties in the compiling of work lists, among other things.

The transporting of nuclear waste through the center of Loviisa did not provoke the anger of residents, but it also did not cause any joy. During the transporting of the first container the following comment was heard on the street corner: "It's a good thing we are getting rid of this mess," depicts the feelings of the city's residents.

The administrators of the Loviisa Power Plant and the Radiation Safety Institute accompanied the transporting of the nuclear waste along the highway. The various stages of the operation will be thoroughly examined later so that subsequent shipments will go more smoothly.

A total of 14 tons of spent nuclear fuel, which has been stored at the Loviisa Power Plant for 3 years, will now be returned to the Soviet Union. The next shipment of spent nuclear fuel will be sent from Finland to the Soviet Union next year.

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CSO: 5100/2316

ELECTRIC POWER

FINNISH PAPER REPORTS SPENT NUCLEAR FUEL RETURNED TO USSR

Enviably Waste Shipment

Helsinki SUOMEN KUVALEHTI in Finnish 28 Aug 81 pp 18-21

[Article by Juhani Virkki]

[Text] Strictly speaking, we should not be talking of a nuclear waste train. In practice, however, spent fuel from nuclear power plants is today worthless waste. It is not bought nor do many countries get rid of it even if they pay for the privilege. The Loviisa nuclear power plant is an enviable exception to the rule.

A rise in the value of spent nuclear fuel is pure speculation, but perhaps soon, at the end of 1,000 years of change, the situation we still believed in some 10 years ago will recur. At that time the recycling of spent fuel, by means of reprocessing, back into modern-type or second-generation power plants, the so-called breeder reactors, was considered to be in the process of rapid development.

Now, there are only a few reprocessing plants and even fewer breeder reactors. The number of nuclear power plants has gone beyond the 300 limit and will climb to almost a thousand by the end of the 1990's. Nations that have reprocessing plants are more and more filling their capacities with nuclear fuel from their own power plants and nuclear weapon production.

10 Years of Negotiations

Although the latest agreement on the shipment of spent nuclear fuel was signed by Imatran Voima (IVO; Imatra Power Company) and the Soviet Atomenergoexport (AEE) as recently as early June, the matter was in principle already settled in 1970 when the procurement agreement for the Loviisa 1 plant was signed.

"The option on the return of fuel was such that the AEE is ready to either receive — or, as they at that time still ventured to say, 'buy back' — spent fuel or to perform reprocessing services by means of which it would at least recover its nuclear materials from the fuel," said Heikki Vayrynen, head of the IVO Power Plant Department's Nuclear Technology Office.

The same assertions are also included in the agreement signed in 1971, which set the terms for the agreement on both unused and spent fuel. Then came the bilateral agreement between the two countries on peaceful cooperation in the use of nuclear

energy, which posed an obstacle. It stated what Finland may export to the Soviet Union, followed by a comma and "not, however, nuclear material." This obstacle was eliminated in 1975, but it took another 3 years before a record of the principles involved was made of the cornerstone of the final agreement.

"There were two reasons why negotiations did not proceed smoothly. On the one hand, there were still few shipments of fuel to the Soviet Union from abroad and, of course, for that reason too the IVO was prudently cautious as a buyer of service. On the other hand, they knew that the first shipment would not be of current interest before 1981," Vayrynen said.

"As I understand it, the Soviet Union's willingness to get the fuel back remained the same the whole time. Eagerness is, of course, hard to measure when, as we have noted, matters have become all topsy-turvy. The value of the goods dropped to zero on the world market and even to a negative figure.

"As regards the Soviets' attitude, we have the impression that the return of the fuel is a matter of principle for them. We know that the matter has been presented as an outright demand to many other countries. This is naturally a way of guaranteeing surveillance over the diffusion of materials that might be used for nuclear weapons."

Agreement Involves Number-One Reactor

The current IVO-AEE agreement involves the Loviisa-1 plant and covers its entire lifetime, or still a good 20 years. The next shipment will be next year, but the following one will not be before 1985. This is because the storage time for spent nuclear fuel at Loviisa has been extended from 3 to 5 years. In the background there are technical reasons: This year fuel elements that have to be removed from the reactor will have been in the reactor for the maximum-allowable time, or 3 years. Because of their greater radioactivity and heat energy, there is good reason to extend the storage time.

Shipment of reactor number two's first exchange consignment will not become a matter of current interest until 1984. The agreement that is to be made before then will be honed down in the light of this and next year's experiences. At the same time it will be agreed on whether one big or two small shipments a year are to be made at the end of the decade. Each reactor produces 14 tons of spent fuel a year.

The first shipment meant 3 weeks of working with three shifts for the IVO. "We estimate that we need a minimum of 2 and 1/2 weeks. The rolling stock was provided for 5 weeks because the Russians estimated that we would need that much time," Vayrynen said.

The rolling stock was received in Viipuri on 29 July. It included two locomotives which were switched coming and going in Vainikkala, four fuel-transport cars, two accompanying cars with safety equipment for the shipping containers and room for the crew, two empty buffer cars and a caboose for the IVO's own communications and other equipment. The IVO's own highway equipment was used between the railroad station in Loviisa and Hastholmen.

"Slight radioactivity in one of the shipping containers and a breakdown with some of the highway equipment delayed the operation for maybe a couple of days. This time too, the safety precautions were perhaps stricter than usual. The work moves very slowly since the containers can only be handled one at a time. Furthermore, the containers require a couple of days for the temperature to come down before the return trip can begin."

5 Million Fuel Buttons

So, 3.5 tons of spent fuel that was removed from the reactor in 1978 were placed into each shipping container. In a filled reactor there are 349 fuel elements. Each element is a hexagonal steel tube containing 126 3-meter-long fuel rods and there are 126 "fuel buttons" in each rod, altogether over 5 million.

Over 95 percent of the spent fuel is natural uranium. The rest is divided up among uranium isotope U-235, which is essential to a nuclear reaction, plutonium and so-called products of fission. There were about 140 kg of U-235, perhaps about 70 kg of plutonium and about a half a ton of these extremely radioactive fission products in the 14-ton consignment shipped from Loviisa, which is why safety precautions were needed.

After 3 years of storage, the fuel's heat energy and radioactivity had dropped to about one one-thousandth of what it was. The material was nevertheless still very dangerous: "We would never even think of shipping fuel without thick containers. In its proximity you would get a lethal dose of radiation in just a few seconds," Vayrynen said.

At Loviisa spent fuel is stored in water cisterns several meters deep. The shipping containers are also filled and sealed in water.

"Practically speaking, the water in the Loviisa cisterns is pure and this time too we confirmed the fact that the shipping containers did not introduce any radioactivity into it. At the time the surface of the containers was inspected even before the water was removed and the containers filled with nitrogen."

"There Are All Kinds of People"

In the opinion of the news media and through them the public, the shipment set in motion from Hastholmen on the 17th was kept annoyingly secret. As far as the IVO is concerned, Heikki Vayrynen regards the matter in this way:

"In our planning we started with the assumption that a shipment of dangerous material is not a dangerous shipment. Thus advance notification of the public was not necessary. For the news media the fuss was over being in a state of emergency readiness in the event that something unexpected should happen, and this was not even unexpected.

"We had three plans: a shipment, an accident readiness and a security plan. The security plan was the only one announced to be secret, naturally — otherwise it would have been worthless. By international standards there is really no rule governing secrecy, but we felt that openly informing the public would have taken the teeth out of our security precautions.

"We also wanted to keep the time of shipment secret and then it became such a hot news item that the matter itself took second place. But anyone who wanted to know would go and see when the train was leaving and then even run alongside it. The fuss over secrecy is much less of a bother than some other kind of fuss.

"The world is full of all kinds of people. A couple of hundred ordinary citizens at the railroad station in Lahti, for example, don't worry us, but just one psychopath is too much. He would hardly be capable of doing any real damage, but he could nevertheless cause a fuss so that, in spite of everything, the train would be in danger. Or someone might chain himself to the rails to draw attention to himself...."

The VR [State Railways] had planned a night schedule for the rail shipment, the reason for which was that the train should not run into any rolling stock or other sensitive shipments. At night it would also be easier to keep watch over the crossings of which, including "cow paths," there were perhaps over 200 along a stretch of less than 500 km.

Vayrynen does not feel that the stretch of track from Loviisa to Lahti is a security risk: "Since the VR has set axle-weight and speed limits and since we operate below both of them, even more noticeably so as concerns speed, there is no cause for fear."

Same Objective for Power Plant Number Three

The IVO is also aiming at the same sort of fuel agreement for its future nuclear plants. A feasibility study for the third power plant is right now in progress with the French firm, SOFRATOM [expansion unknown], and its old supplier, the AEE. According to the IVO, there is reason to decide on bids by 1983.

"I would not, however, so absolutely categorically state that the IVO would only consent to an agreement like the present one. The work has barely begun and the partners have been so chosen as to be able to at the same time also map out their abilities to provide services for the treatment of fuel waste," Vayrynen said.

"The best alternative would, of course, be for the waste not to come to us. We are trying to see to it that, if and when we conclude an agreement for the supplying of a power plant, the fate of the spent fuel will simultaneously be decided on too. Thus the matter would not be postponed until the 1990's, when the power plant would be built."

IVO's Other Waste into a Cave

Helsinki SUOMEN KUVALEHTI in Finnish 28 Aug 81 p 21

[Text] Nuclear power plants also produce other radioactive material than spent fuel. This so-called power-plant waste is divided into mid- and low-level radioactive waste. Mid-level radioactive wet waste — for example, different kinds of filters — accumulates in cleansing the water used in the plant's processing circuits of radioactivity from, for example, corrosive products and materials that may leak from the fuel.

Low-level radioactive waste is dry matter. The protective clothing, bits of board, tools, etc. included in this category are most typically produced in connection with plant annual plant maintenance operations.

Several tens of cubic meters of wet waste and less than 100 cubic meters of dry waste requiring further treatment have so far accumulated. The storage plan has been drawn up on the assumption that, when in time fuel leaks become more common, about 250 cubic meters of wet waste a year could accumulate.

Wet waste is at present stored in tanks on the plant grounds. Dry waste is either baled or put into barrels.

The IVO has a plan ready which includes a so-called plant for stabilizing wet waste with concrete and intermediate storage of the concrete blocks it produces. A decision on the construction of the plant has not yet been reached. This will essentially depend on how fast wet waste accumulates; its current level is considerably lower than what is referred to as normal.

The ultimate storage of waste in concrete blocks in a rock shelter to be blasted into the rock at Hastholmen is also linked with the plan. The suitability of the bedrock was tested a couple of years ago to a depth of from 50 to 120 meters. There is nothing that has become apparent in the plan which might prevent realization of the rock shelter storage facility.

Next June the IVO will submit a so-called site report, in which it is proposed that waste could ultimately be located according to the plan, to the Ministry of Trade and Industry.

The IVO and the Industrial Power Company (TVO), which owns the Olkiluoto power plants, do not feel it very likely that power-plant waste will ultimately be located at a common site in Olkiluoto or Hastholmen or in some entirely different third community.

TVO Considers Temporary Solution

Helsinki SUOMEN KUVALEHTI in Finnish 28 Aug 81 p 21

[Text] Each of the Olkiluoto power plants produces 18 tons of spent fuel a year. So far, about 200 cubic meters of plant waste has accumulated in them. At Olkiluoto wet waste has already been "baled" since both plants have bituminous coating plants. TVO plans for the ultimate locating of mid-level radioactive waste are the same as at Loviisa.

The TVO has not succeeded in arranging for the shipping of spent fuel out of Finland. Last year the TVO rejected an English offer for the reprocessing of fuel. They felt that the bid was too high in addition to the fact that it would have covered only a year and a half's accumulation of spent fuel and the so-called reprocessing waste would have been returned to Finland.

The TVO is at present investigating two alternatives. On the one hand, it in principle has an open line to Sweden where the TVO would get a central storage facility, to be built at Oskarshamn in 1985, for the intermediate storage of spent fuel for 25 years.

On the other hand, the TVO is investigating its own alternative, that is, the construction of an intermediate storage facility alongside its plants with a capacity of over 20 years. The present cistern space will be filled by the early 1990's. According to TVO general manager Magnus von Bonsdorff, the alternatives will be decided based on cost. Olkiluoto's current license to operate will expire at the end of 1983. A new license application must be filed next year and von Bonsdorff says that "matters must be settled by then."

The TVO does not expect any new reprocessing bids. Neither of its alternatives are aimed at reaching a final decision for "several decades." There will then be two alternatives: reprocessing or the storing of spent fuel in Finnish bedrock.

11,466

CSO: 8117/1939

FUELS

REPORT ON TYUMEN' ENERGY PROGRAM DEVELOPMENTS

Moscow IZVESTIYA in Russian 26 Aug 81 p 2

[Article by IZVESTIYA special correspondents V. Buldashov and Yu. Perepletkin, Novyy-Urengoy-Surgut-Nizhnevartovsk-Tyumen': "Worker Valor"]

[Excerpts] The riches of the Tyumen' land are well known. But the road to these riches is difficult. Nature has hidden them under trackless swamps, under the armor of permafrost. Taiga wilderness, the silent tundra, and the bitter cold must be conquered by those who have come to open up the treasure stores of oil and gas, about which a poet said: "They are indispensable -- of eternal value, without which neither Tyumen' nor the nation can take a single step..."

This harsh region is our main oil producing area. Within a short period of time a highly efficient complex was established here, which produces more than 10 percent of the world's oil and gas output. The gigantic construction project of the century is in progress in the broad expanses of the Ob' North, the total area of which is larger than France, the FRG, Italy and Great Britain combined. Today it is not forest paths and deer trails which characterize the landscape of this region, but rather big oil and gas fields, plants, rail lines, highways, river ports, and airfields. New cities have sprung up around Tyumen', as a pearl necklace adorning the first Russian city in Siberia.

The party has specified as the most important components of the energy program for the 1980's an increase in oil and gas production in Western Siberia and their transport to the European part of our country. The Tyumen' people are responding to this with shock-work deeds. A goal has been set: to reach a daily production figure of 1 million tons of crude oil per day in the oilfields of this oblast by April 1984, plus a production figure of 1 billion cubic meters of gas by the first quarter of 1985. This initiative has been approved by the CPSU Central Committee.

In the Oilfields

In the current five-year plan this oblast will produce as much crude oil as in the preceding 15 years.

"Our oilfields are near Samotlor Lake. Our 'shop' is situated in a swamp, on a land-fill island, surrounded by taiga," stated A. Sukhova, oil and gas production operator of Shop No 4 of the Nizhnevartovskneft' Administration. "We are a Komsomol-youth work force, and we are doing a good job. We took second place among the administration's Komsomol-youth work forces for the second quarter of the year. We have both enthusiasm and a desire to do an even better job.

"What reserve potential do we possess? First of all, skill improvement. Our most experienced oilfield worker is Ivan Pavlovich Pan'kov, foreman of Brigade No 4. (Incidentally, he was one of those who placed the 'big city beacon'). He directs a school of advanced know-how, and his brigade is also a school. You might say that all of us have gone through it. Newcomers are assigned to this brigade. The administration's training combine provides pretty fair knowledge, but it is necessary in addition that theory confront practical application. The young people who came to work here last year have improved their job proficiency categories from second to fourth-fifth.

"We have modern, fascinating equipment and a thoroughly perfected oil production technology. But even so, new developments and innovations occur every day. Right now, for example, experiments are being conducted which involve pumping through chemical reagents to prevent metal corrosion and and deposition of salts.

"Of course our results also depend on how neighboring units perform. For they are not just standing by idly but are also participating in competition. Well sub-surface maintenance brigades are working hard and conscientiously. We also have a very long period between maintenance in mechanized production -- 270 days on the average....

"Reserve potential. A constant search is in progress at every work station. And success is being achieved. Party organizations and soviets are creating the requisite conditions for competing personnel to display innovativeness and make a personal contribution to the common cause. Oil production targets for each day, month, year, for the entire period up to achievement of the 1 million figure are assigned not only to associations and administrations, but also production brigades and well cluster operators, for each individual must reach his own labor performance target in order for all of us together to attain our goal faster."

Daily production in this oblast has now reached 890,000 tons. The total production figure this year is more than 14 million tons greater than during the same period last year. Approximately 1 million tons of this figure is above-target production. It is notable that almost one out of every four tons produced above target has been produced by the competition leader -- the work force of the Yuganskneftegaz Association.

Blue Fuel of Urengoy

Today one out of every three cubic meters of natural gas produced in this country comes from Tyumen'. It will be one out of every two by the end of the five-year plan.

Scientists claim that Tyumen' has a future potential of producing a trillion cubic meters of natural gas per year, and not only for the present generation but for succeeding generations as well. Its [Urengoy] reserves are truly immense. It will provide our country with 800 billion cubic meters of "blue fuel" in the five-year plan. Annual production growth will run approximately 50 billion cubic meters.

The following figures also speak eloquently of the scale of forthcoming activities. Urengoy's share in producing a billion cubic meters of Tyumen' natural gas per day will comprise 720-740 million. This is triple the current production rate!

Bringing a field into production is a common task of the gas production people, construction workers, drillers, power engineers, and transport people. A "worker relay" helps. The work force of the Urengoy Natural Gas Production Association imeni S. A. Orudzhev has competition agreements with its associated organizations. Their interaction is organized by a coordination headquarters.

One would wish equal understanding of the concerns and needs of the Novyy Urengoy people by the ministries and agencies. Unfortunately, the pledge adopted by the work force of the Nadymelektroset's'troy Trust -- to bring on-stream ahead of schedule the LEP-500 power line from Tarko-Sale to Novyy Urengoy -- received no support at Minenergo [Ministry of Power and Electrification]. Mintransstroy [Ministry of Transport Construction] is also failing to show proper concern regarding meeting the plan targets assigned to its enterprises....

Road to Honor Watch

More than 300 enterprises and organizations, 1600 sections, shops, brigades, and vehicle crews, totaling more than 200,000 workers, pledged accelerated development of oblast oil and gas field facilities.

The time required to reach high performance results depends on smooth work performance by associated organizations and personnel. Oil and gas field workers will be able to reach daily production figures of 1 million tons of crude and a billion cubic meters of natural gas if they have at their disposal new producing areas which have been prospected and explored by geologists. Natural gas can be conveyed from the northern fields to the consumers if the pipeline people have constructed pipelines on schedule. It is impossible to work remote locations if no roads or power lines have been extended to these areas and if not even temporary housing has been constructed there.

...The geological exploration people are advancing further and further northward. They have discovered dozens of oil, gas and condensate pools, removing the last "blank spots" from the map. The specialists of the Aganskaya, Karskaya, Tazovskaya and other expeditions are successfully conducting exploration activities.

The helicopter pilots of the civil aviation administration are greatly assisting the oilfield people. Performing the most diversified assignments, they have logged more than 2 million hours in the air since the beginning of the year. These "winged experts" are taking part in laying pipelines and building compressor stations, are hauling urgently needed supplies, are delivering crews to remote oilfields, are stringing power lines and erecting power line towers. The aviators of Salekhard, Tyumen', Surgut, and Nizhnevartovsk are doing a particularly fine job.

The total volume of allocated funds utilized by the specialists at Glavtyumenneftegazstroy is increasing by 60 million rubles each year. In the current five-year plan they will be bringing on-stream 35 new oil and gas fields and will be erecting, hundreds of kilometers from cities and towns, production facilities, housing for drilling crews and oilfield operating personnel, meal facilities, stores, and clubhouses.

Great responsibility bears on the shoulders of the pipeline construction crews: during the current five-year plan they must achieve a capital spending figure equal to the three preceding five-year plans. The workers of Glavsibtruboprovodstroy have pledged to complete an 850 kilometer section of the Urengoy-Petrovsk natural gas pipeline by the end of this year -- four months ahead of schedule. Another 110 kilometers of main pipeline were recently tested. The Sorumskaya compressor station has come on-line. The workers building these buried pipelines are transitioning more and more rapidly from a seasonal to a year-round work operation. Last year 2280 kilometers of pipelines were constructed, while this year they have achieved almost an equal figure -- 2220 kilometers -- in six months.

"We have been working for several years now on a brigade contract," stated USSR State Prize recipient V. Kalenov, who heads a welding-installation brigade in the Surguttruboprovodstroy Tust. "This method teaches the men a thrifty attitude toward public property and teaches them to perform a job with excellent quality. In the last winter season all sections welded by our brigade received no mark below excellent or good. And this involved operations totaling more than 5 million rubles. This year we shall be laying a backup Surgut-Polotsk pipeline and shall be laying lines in the Fedorovskoye oilfield.

Victories Over the Depths

Savings from utilization of advanced equipment and technology at enterprises of the oil and gas complex will total more than 28 million rubles per year.

The drillers of the Yuganskneftegaz Association have been making quite a name for themselves lately. In May F. Gabdullin's brigade set a record, drilling 9,250 meters in a single month. In July the brigade under Foreman Yu. Boyko drilled 10,663 meters! How were they able to do this? There is no secret about it. The competition rival work forces are old friends. Yu. Boyko's brigade, adopting know-how developed by their comrades, learned to save time on preparatory operations and in drilling for conductor pipe. Minutes added up to hours, and hours produced additional meters.

A lightweight drill string was employed in Drilling Administration No 2 at Samotlor, making it possible to shorten each trip-in and trip-out operation by 5 percent. They also began extensive utilization of new pumps, which substantially improved the drilling process. Today these pumps and drill strings can be seen everywhere.

The Samotlor workers have on many occasions passed on to other brigades various innovations: turbodrills, bits, check valves, alignment devices, jiggling screens.... They have tried out and proven new drilling rigs, and numerous improvements have been made in methods of preparing drilling mud. Improvements are rapidly disseminated: schools of advanced know-how operate on the basis of the best brigades.

Extensive adoption of the experience and know-how of leading workers opens up extensive opportunities. Take drilling, for example. The top brigades achieved performances of 90-100 thousand meters per year. The average figure for the main administration, however, is approximately half that. Enumerating other reserve potential available to the Tyumen' oilfield workers, Glavtyumenneftegaz chief engineer N. Zakharchenko also mentioned changeover to the advanced gas-lift method of production.

The Siberians are already acquainted with gas lift. For approximately 10 years now they have been pumping crude in the Pravdinskoye field by injecting casinghead gas into the well. Submersible pumps and beam-pumping units become unnecessary and, most important, gas-lift wells are more productive and operate efficiently and for a long period of time. When a comparison was made of the performance of Pravdinsk gas-lift wells and Ust'-Balyk conventional (sucker-rod) wells, it was determined that time between maintenance on the former is from 6 to 10 times that of traditional wells.

The Pravdinsk production people maintain a close link with science. Tyumen' scientists are frequent visitors in the oilfields, and specialists from the Tomsk Construction Engineering Institute and the Sverdlovsk Mining Institute have also been very helpful.

This advanced method should be adopted in all the major fields of the Surgut and Nizhnevartovsk areas. And much is being done at the present time to accomplish this. Large-scale adoption of gas lift will accelerate the advance toward the daily production target of 1 million tons. In the first three years of the current five-year plan more than 1,500 wells are targeted for changeover to the new technique in the Samotlor fields alone. A total of 14 compressor stations are to be built, 1,000 kilometers of high-pressure natural gas pipeline are to be laid, plus construction of 250 distribution units, and incorporation of several computers.

Is this a complex and difficult task? Yes, it is, but quite profitable! The first millions of tons of additional crude will be produced in the near future, while by the end of the five-year plan gas lift in the Samotlor will "increase" production by 45-50 million tons. In addition, approximately 500 jobs will be eliminated. Remote control devices will make it possible to control and regulate well output without replacing equipment.

In short, the conquerors of the Tyumen' oil and gas virgin lands will adopt all new advances. Employment of sophisticated equipment and advanced technology will also help accomplish those complex and critical tasks assigned to the Siberian oil and gas industry workers by the 26th CPSU Congress.

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INTERVIEW WITH HEAD OF GLAVTYUMENNEFTEGAZ

Tallinn SOVETSKAYA ESTONIYA in Russian 6 Sep 81 p 1

[Interview with R. T. Bulgakov, chief of Glavtyumenneftegaz, and Yu. I. Topchev, chief engineer of the Tyumengazprom All-Union Industrial Association, by TASS correspondent V. Zhilyakov, Tyumen': "The Tyumen' Region: Achievements and Future Prospects"]

[Text] On 6 September our country celebrates the All-Union Oil and Gas Industry Workers' Day. The labor successes of the Tyumen' oil and gas industry workers and the region's future development prospects were the subject of an interview by a TASS correspondent with Hero of Socialist Labor R. T. Bulgakov, chief of Glavtyumenneftegaz, and Yu. I. Topchev, chief engineer of the Tyumengazprom All-Union Industrial Association.

Bulgakov: Socialist competition for the earliest possible achievement of daily production figures of 1 million tons of crude oil and 1 billion cubic meters of natural gas is being conducted on an ever increasing scale in the oil and gas fields of this oblast. This initiative on the part of the work forces of the Tyumen' oil and gas complex has been approved by the CPSU Central Committee. Glavtyumenneftegaz has already above-target produced more than 1 million tons of crude since the beginning of the year.

Topchev: The gas field production people also have good news to report. Their holiday coincides with an important event in the biography of our work force: the 15th anniversary of commencement of development of the first Tyumen' gas fields. At that time an entire year's production totaled approximately 600 million cubic meters. Today our gas fields produce almost as much every 24 hours.

Zhilyakov: As much work is to be accomplished in the 11th Five-Year Plan as has taken three five-year plans. This of course requires not only a solid raw materials base but also enormous organizational work.

Topchev: Absolutely correct. In order successfully to accomplish our tasks, we have specified concrete volumes of work to be performed not only for large subdivisions but also for each oil and gas field worker. We are counting on the assistance of the scientists, without whom we could not accomplish exploitation of the mineral riches of the Tyumen' North so rapidly. At the present time we are being assisted by more than 50 scientific research institutes, design institutes, and scientific

organizations of many ministries and agencies. The assistance of the scientists is highly effective: in the past we were building comprehensive gas processing units with an output of 7.5 billion cubic meters per year, while today we are processing twice as much raw product without an expansion in the size of facilities. But we can achieve more: in the near future we shall be installing higher-output units. And we have another important reserve potential for increasing natural gas production: renovation of the old producing fields.

Bulgakov: The socialist competition which has developed in the Tyumen' oil and gas fields helps us seek out internal reserve potential, popularize and disseminate advanced work technique, and seek progressive methods of improving production efficiency. It is precisely labor competition and dissemination of advanced know-how which helps substantially increase well flow figures, which will make it possible to obtain additional hundreds of thousands of tons of "black gold." Much has been accomplished by well workover services to maintain formation pressure, accomplishing tasks of obtaining greater resource yield. High-output units are presently capable of injecting more than 2 million cubic meters of water daily into producing formations.

Topchev: But it would be incorrect to ascribe all successes to the oil and gas production people alone. I should like to give credit to the geologists, who have discovered new fields, and to workers in culture and the arts, who bring concerts to the Arctic tundra from Moscow and Leningrad, Uzbekistan and the Ukraine. The construction workers have also done a good job, completing ahead of schedule the line portion proper of the Urengoy-Gryazovets natural gas main pipeline.

Zhilyakov: Tishad Timirgaleyevich, lying on your desk, alongside oil production and drilling reports, are reports on progress in construction of housing and industrial facilities. Tell us about this aspect of life in the Tyumen' North.

Bulgakov: Today the Tyumen' oil and gas complex is a vast construction site. Roads, high-voltage power transmission lines, and pipelines are being constructed in the midst of swamp, marsh, and taiga. Base towns are growing -- Nefteyugansk, Nizhnevartovsk, Surgut, and Uray -- and dozens of other communities are under construction. Many of this country's cities and republics are helping us build them.

Topchev: The experience amassed by oil industry workers in building modern towns in undeveloped areas is also being extensively utilized by the natural gas people. When we were just beginning development and exploitation of the mineral resources of the Arctic tundra, there were many different views and opinions. The majority boiled down to putting up temporary shelter for personnel. Our ministry's position in this regard has been and remains unequivocal: no temporary shelters, only base cities. The Tyumen' North cannot be conquered with a single swift assault. Nor have we come here to stay only a year or so. Western Siberia is just squaring its shoulders. At this point I should like to recall a statement made by Comrade L. I. Brezhnev at the 26th CPSU Congress: "The oil and gas fields of the Western Siberian region are unique. The largest -- Urengoy -- contains such immense reserves that it is capable for a period of many years of meeting not only this country's domestic requirements but of also producing for export...." There will be plenty of work here even for our grandchildren. For this reason the attractive town of Nadym has been built alongside the Medvezh'ye field, and the town of Novyy Urengoy

is going up alongside Urengoy. And the plans for tomorrow's urban centers and residential districts for the oil industry workers are on the drawing board at design institutes. ...The Tyumen' oil and gas industry workers clearly see the future development prospects of the fuel and energy complex. Maps have been drawn which clearly show how it will appear tomorrow. After some time, new over-land pipelines will stretch where the dashed lines are placed, and hydrocarbon deposits presently known only to geologists will be producing commercial quantities of crude oil and natural gas. The birth of a mighty fuel base in the harsh conditions of the North constitutes a vivid example of the enormous productive force of the Soviet people.

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NIZHNEVARTOVSK DRILLING OPERATIONS

Kazan' SOVETSKAYA TATARIYA in Russian 1 Jul 81 p 2

[Article by SOVETSKAYA TATARIYA volunteer correspondent R. Safin, Bugul'ma-Nizhnevartovsk: "Tyumen' Watch"]

[Excerpts] The Samotlor oilfield in the northern part of Tyumenskaya Oblast is one of the nation's major petroleum resources. Suffice it to say that two oil and gas production associations in this area produce approximately 150 million tons of crude oil each year.

The productive resources of a number of this country's oblasts and republics have been enlisted to help develop and exploit the northern oilfields. In 1978 drilling crews from the Tatar ASSR arrived on the Middle Ob'. A year later drilling crews of the contractor organization Bugul'minskoye Exploratory Drilling Administration achieved considerable progress in sinking directional holes.

M. Khayrutdinov, manager of the Tatneftegazrazvedka Trust, who happened to be in Nizhnevartovsk on business, helped flesh out the overall picture of the labor contribution of the Tatar ASSR drilling crews.

"Our drillers," stated Mirgasim Nasretdinovich, "were the first of the contractor enterprises to drill 1 million meters for the oil workers of Tyumen'. One can be proud of that. The contribution of our 'Siberians' to the trust's operations is already substantial. In 1980 the work forces of the Bugul'minskoye and Menzelinskoye administrations drilled through 630,000 meters of rock in Tyumenskaya Oblast. This comprises 66 percent of the trust's plan target.

"This year a tougher target has been assigned: to drill 950,000 meters of borehole. In connection with this our trust has organized another contractor administration -- the Bavlinskoye."

Providing Services and Amenities

Even veteran executives of local enterprises were surprised: how fast the Bugul'ma people had built! As recently as March of last year this site, on the outskirts of

Nizhnevartovsk, was swampy taiga. A residential community with services and amenities sprang up there within six months. A dozen dormitory cars, a bath house, and a two-story office building. A spacious dining hall opened up as the new year was ushered in. Today a newly-arriving driller will always find here a modest amount of warm comfort. He will receive adequate sleep to recover from his trip and he will be fed in the dining hall. His strength and energy replenished, he will then head off for the drilling rig.

Things were different in the past.... There was no place to accommodate people after the long flight. They would while away the time on benches at the airport terminal. One does not soon forget experiences like this. Thus they had an enthusiastic labor force to wield the axes when the administration "knocked out" materials for construction and obtained dormitory cars.

Semen Ivanovich Bagriy, chief of the Bugul'ma URB [Exploratory Drilling Administration], relates this with a feeling of satisfaction. Enclosed, heated buildings have been erected to shelter equipment and trucks. Drivers have no problems even when the mercury plummets to 50 degrees below zero Celsius: within minutes they have the trucks out on the oilfield roads. But construction is continuing. The metal framework of new production buildings is going up alongside the administration's offices. Tomorrow they will be serving the Bugul'ma drillers.

Some Geography

If you wish to become acquainted with the permanent residence of the administration's personnel, it would be appropriate to take a map of this republic. Drillers travel to Tyumen' from many parts of the Tatar ASSR, primarily from the oil producing areas. Bugul'ma, Al'met'yevsk, Dzhalil', Leninogorsk, and Aznakayevo have sent their lads to the oilfields of the Middle Ob'.

A new rhythm of life has begun for them. Rest and recovery in the circle of one's family alternates with a two-week stint of hard work. It is no simple matter to adapt to these conditions. A person's strength and fortitude are tested at two poles, as it were. His dedication to his chosen task and his loyalty to duty and family are tested. The following was related to me. The wives of two drillers laid down an ultimatum to their husbands: either come home, or divorce. A few days later two telegrams were dispatched to the Tatar ASSR: "I am staying" and "I am coming home." I shall not stand in judgment as to which one is right.

Assistant driller Vladimir Zolotukhin had a heart-warming story to tell. "My wife and boys, Dima and Zhenya, always impatiently await my arrival. The family reunion is a big event. Once I brought the boys a squirrel. They were really pleased; they play with it and take care of it. When your family supports you and your job is going well, it puts you in a good mood."

Driller Aleksandr Kanishchev was of the same opinion: "I am sure that when I arrive home my wife will already have bought tickets to new films and that we will go to the movies together."

There are many such families on the administration work force.

At the Drilling Rig

Administration chief S. Bagriy suggested that I travel to Samotlor and visit the brigade of Foreman Kuznetsov. For successes in socialist competition, this work force was awarded a Certificate of Merit of the Tatneftegazrazvedka Trust.

The brigade was drilling wells 80 kilometers from town. The taiga here still looks pretty much untouched by man. Dense stands of Siberian stone pine, virgin cranberry bogs, great quantities of cowberries and blueberries. From time to time a chipmunk will scurry past, and an occasional partridge, startled, will dart skyward from the snow-covered ground. Capercaillie and black grouse have been seen in these parts. Bears and gluttons have not yet retreated from this area. Once a driller, who was gathering cranberries in a nearby bog, was approached by a glutton -- a powerful and crafty beast. Fortunately the encounter was uneventful: the driller spotted the animal in time. They recall the story of a large bear which ambled up to one of the drilling rigs. They had to halt work and, with the entire crew, to drive off the bear, who seemed intent on hanging around the dining hall.

When we arrived at Cluster 191, they were tripping in a casing string. The brigade had drilled down 2,448 meters at a rapid pace, in 12 days. Now the drillers were endeavoring to consolidate their success and promptly to commence cementing.

Driller A. Kanishchev's crew was tripping in the casing string. Assistant driller M. Khasanov and rig electrician R. Ibragimov were working on the pipe racks. One stand after the other was run into the wellbore. Senior engineers V. Moiseyev and N. Vagizov of the technical and production departments monitored the tripping-in. Senior geologist V. Avilkin was also present. There was a reason for their presence. Ten casing joints failed, for example, as the string was being run in.

In this situation the Bugul'ma drillers proceeded with a method tested and proven in other administrations -- they set up a pipe pressure testing and quality inspection team.

The relief crew arrived. Kanishchev and his crew headed for the showers. "The men have stood up well," he commented, tiredness evident in his voice. "Well, anyway, tonight is our last tour. Tomorrow we fly home to our families."

...The temperature had dropped below freezing by evening, when experienced driller A. Musin's crew arrived for its tour. A gusty wind was blowing. The driller climbed up onto the rig, accompanied by assistant drillers Rafail Abyazov, Rafkat Rakhimov, Sergey Ushakov, and rig electrician Gizatulla Ilalov. They are from Bugul'minskiy and Leninogorskiy rayons.

Akhat Kalimullovich Musin has been working in the North for 13 years now. He worked drilling rigs in Nefteyugansk and later in Mamontovo, where wellbores reached depths of 3,000 meters. But he was homesick. Having heard that a contractor URB was being set up, he was one of the first to request a transfer.

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REPORT ON OIL DRILLING IN VYNGAPUR

Minsk SOVETSKAYA BELORUSSIYA in Russian 6 Sep 81 p 2

[Article by A. Sopot, Vyngapur-Nizhnevartovsk: "New Address: Vyngapur"]

[Excerpts] The helicopter crossed the invisible border of the Yamalo-Nenets National District, and the landscape gradually changed. Small islands of taiga began to appear with increasing frequency. Finally we began to see drilling rigs and small communities.

We landed in the village of Noyabr'skoye. I soon located Vladimir Nikolayevich Kravchenko, deputy chief of the Belorussian Drilling Operations Administration for drilling oil wells in Western Siberia. Although he was quite busy, he kindly related and showed to me the amount of work the construction people had accomplished in two weeks. And much has been accomplished. A log warehouse building has been erected, the foundation has been laid for a (barmovskiy) building, and 10 hectares of taiga are being cleared for construction of production facilities. Under the supervision of supply engineer Yefim Yefimovich Malashenko, all day long freight is hauled from rail-line team tracks, with more and more supplies arriving every day. The job is not an easy one. The Belorussian oilfield workers do not yet have their own equipment at Noyabr'skoye, and therefore they must borrow from other organizations. The Belorussian UBR [Drilling Operations Administration] is taking an enormous step north in Tyumenskaya Oblast -- from Samotlor to the Yamalo-Nenets National District. The Belorussian oilmen have been assigned the task of bringing a new oilfield into production -- the Vyngapur field.

"We shall begin drilling at the Vyngapur site in January 1982," stated Vladimir Nikolayevich. "250,000 meters of wellbore -- that is the state plan for next year, and by the end of the 11th Five-Year Plan the figure is to be 860,000 meters per year. This is of the 1 million meters targeted for the administration in the final year of the five-year plan."

It is precisely here at Vyngapur where the Belorussian oilmen will be working to make their important contribution toward the Tyumen' production target of 1 million tons of crude per day. Drilling conditions are difficult at Vyngapur. In the first place, the wells will be considerably deeper than at Samotlor and, in the second place, the drillers must pass through two gas-producing formations to reach the oil. This is no easy task.

Vladimir Nikolayevich is no newcomer to the Tyumen' North. He is well acquainted with Nizhnevartovsk, with Urengoy, as well as less famous towns and villages in Tyumenskaya Oblast.

Kravchenko conducts planning sessions in a businesslike manner, with brevity, and demands accuracy and precision of his subordinates. It is thanks to his energy and efforts that the men have moved out of tents and into dormitory cars, have clean bedding, and receive meals on schedule in the dining hall. "Oil begins not with a drilled wellbore, but rather with more prosaic things," stated Vladimir Nikolayevich. "With a spoon, bedsheet, refrigerator, and television set.... In short, with making life comfortable for the men. We have established in Noyabr'sk the necessary conditions for normal daily life and activities, and a large production-maintenance facility will be built -- that is, we shall also have oil. Which workers are performing shock-work labor? All of them. We don't tolerate any loafers here. The men have come here not because they were ordered to but by their own desire. If the road builders do not let us down (we do not believe they will), we shall start making hole at Vyngapur in January."

Preparatory work is in full swing in Noyabr'skoye, while 400 kilometers away, in the Potochnoye and Samotlor oilfields, Belorussian oilmen, who are engaged in socialist competition to achieve a daily production figure of 1 million tons of crude and 1 billion cubic meters of natural gas, are exploiting the mineral resources of Tyumen'. The drilling brigade of N. Matsiguda and A. Gamov achieved the nine-month target by 20 August, having drilled 30,800 meters of oil well instead of the targeted 24,800 meters. The brigade took first place in socialist competition and was awarded the Challenge Prize of the newspaper SOVETSKAYA BELORUSSIYA.

The workday was over at the production base of the Belorussian UBR in Nizhnevartovsk. The last bus had departed, transporting workers to the old part of town where the cottage housing was located, but the production base was not deserted. The dispatcher service was still on duty, maintaining communications with the drilling rigs, in order to give them required assistance when needed. Stepan Pavlovich Mazurok, chief of the Belorussian UBR, was also on the job. He was perusing summary reports, charts, signing documents which had piled up during the day, and was planning his schedule for the following day. It is no easy job to head a work force of more than 2000 men. Another leadership difficulty lies in the fact that the work force is split in two, as it were. One half is at work at Nizhnevartovsk and in the oilfields, while the other half is resting up back home in Belorussia.

TU-134 aircraft fly in to Nizhnevartovsk those who are about to start a 15-day tour of duty and fly out those who have completed a duty tour. The shifting of work crews is handled smoothly. It is true that flights sometimes experience delays. The airline people, not the drilling crews, are to blame for this. Nevertheless, in spite of a few problems, the oilmen are working smoothly, and Stepan Pavlovich does not conceal the fact that he is pleased with the labor performance of the work force.

"Right now the wells drilled by our administration in Tyumenskaya Oblast are producing 3 million tons of crude. We have completed 80 wells just in the first seven months of this year. This is a pretty fair number if one considers the fact that we are conducting drilling operations with only 11 rigs. In addition, our administration is less than 3 years old.

"We erect drilling rigs, move them to new sites, deliver to them the necessary supplies, pipe, etc, that is, we perform all jobs with our own resources, from site preparation to well completion. We do have difficulties in the area of providing living conditions for our people, which perhaps at first glance seem minor, but they constitute substantial hindrances in our work. I am in favor of providing people with decent living conditions, cultural and leisure-time activities. It is very important that a worker live in warm housing, eat decent meals, sleep in clean bedding, and be able to watch television and read during his off-duty hours. We endeavor to provide such conditions, but desire alone is not enough. It is deplorable that we are short of bed linen, warm clothing, refrigerators, television sets, radios, and that we are totally without books, although funds are available for purchasing all these things...."

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NATURAL GAS USE EXPANDING RAPIDLY IN KAZAKHSTAN

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 6 Sep 81 p 2

[Article by V. Ageyev, deputy chief of Kazglavgaz [Main Administration for Gas Services of the Kazakh SSR]: "The Republic's Blue Fuel"]

[Text] Workers of the republic's gas services, like the whole Soviet people, are striving to implement the majestic plans for the country's economic and social development that were set by the 26th CPSU Congress.

The installation of equipment for gas service is proceeding at a rapid pace in Kazakhstan. A major set of measures for creating a reliable base for supplying customers with the blue fuel and for improving the management of operations by improving planning, intensifying the role of economic methods, expanding the economic self-sufficiency and initiative of enterprises and organizations, and increasing the responsibility of and material incentives for collectives for the results of their activity has been executed.

During the 10th Five-Year Plan alone, 38.3 million rubles of capital investment were assimilated, 24.9 million rubles' worth of construction and installing work were carried out, and fixed capital worth 34.3 million rubles was introduced. Put into operation were 654 kilometers of gasline grids (instead of the 636 kilometers planned), 3 operating bases for gas services in Kzyl-Orda, Sary-Ozek and Semipalatinsk, 12 centers for exchanging gas tanks in Ural'skaya, Alma-Atinskaya, and Aktyubinskaya Oblasts and other oblasts, 10 production bases for construction organizations, and an Alma-Ata motor-vehicle gas-refueling station--the republic's first. Stations for filling gas tanks were erected or rebuilt in Arkalyk, Karaganda, Petropavlovsk and Dzhambul.

Definite work was done to introduce advanced technology and the mechanization and automation of technical processes. During these years more than 400 measures were executed with total economic benefit of 1.2 million rubles. Ten carousel units and 24 apron floor-type conveyors were introduced and 263 vehicles were converted to use liquefied gas as fuel.

Today, gas services have been transformed into a huge branch of Kazakhstan's economy. Our organizations are operating more than 4,200 kilometers of gaslines, 980 group-type and cabinet-type distributing points, 3,700 group-type tank installations, and many other facilities. More than 8,500 enterprises and 2.98 million apartments have been readied to use gas. Eighty-four percent of the housing

inventory is now supplied with the blue fuel, and in rural localities the figure is 87.8 percent. In level of use of gas, Kazakhstan now occupies one of the leading places not only in the USSR but also among the developed capitalist nations of the world. This has enabled workers' living conditions to be greatly improved.

The collectives of Kazgazstroyontazh [Kazakh Trust for the Construction and Installation of Gas Services Facilities], Almaataoblgaz [Alma-Atinskaya Oblast Gas Services Production Association], Dzhambuloblgaz, and Petropavlovskoblgaz achieved the best results in fulfilling socialist commitments of the 10th Five-Year Plan. For results of the competition for 1980, the collective of Kazgazstroyontazh was awarded the challenge Red Banner of the Kazakhstan Communist Party Central Committee, the Kazakh SSR Council of Ministers, Kazsovsprof [Kazakh SSR Council of Trade Unions] and the Kazakhstan Komsomol Central Committee, while the collectives of the three named associations were awarded commemorative Honorary Diplomas of the Kazakhstan Communist Party Central Committee, the Kazakh SSR Council of Ministers, Kazsovsprof and the Kazakhstan Komsomol Central Committee.

For successes achieved, 26 persons were awarded USSR orders and medals and Honorary Certificates of the Kazakh SSR Supreme Soviet, and the titles Distinguished Worker of the Kazakh SSR Oil and Gas Industry and Distinguished Kazakh SSR Construction Worker were conferred on skilled workers.

Many Kazglavgaz enterprise collectives achieved high indicators in the labor rivalry while greeting the occupational holiday. Among them were collectives of the Chimkentskaya, Ural'skaya and Tselinogradskaya Oblast Gas-Services Associations. Advanced production workers--Almaataoblgaz mechanics M. Besterekov and I. Tolstykh, Dzhambuloblgaz mechanics A. Balabanov and O. Mirzakhanov, Kazgazstroyontazh electrical welders I. Nurzhanov and I. Mikhaylov and many others--are lending tone to the competition.

Uninterrupted supplying of the republic's customers was made possible, thanks to the selfless labor of the branch's workers. During the first 8 months of 1981, 243,000 tons of liquefied gas and 3,864 million cubic meters of natural gas were released to customers. The plan to extend domestic services was carried out 103 percent. It must be emphasized that the successes of the republic's gas services workers are the result of the enormous organizational work of the branch's party, trade-union and Komsomol organizations.

Major tasks were set for us for the 11th Five-Year Plan. Thus, we must now do a total of 23.7 million rubles' worth of contract work and 1.36 million rubles' worth of design work and introduce 100 kilometers of gas grids, two buried storage facilities, one center for the exchange of tanks, and others. There have been definite difficulties in solving the diverse tasks. Thus, we have not been supplying Alma-Ata customers adequately with natural gas, especially during the fall-and-winter period. This is caused by the fact that a section of the Chimkent-Alma-Ata gas pipeline was laid in one strand and was not tested at maximum working pressure. The situation was exacerbated still more because for a distance of 300 kilometers no KS-4a compressor station has been built yet, and the needed underground gas storage does not exist.

Kazglavgaz enterprises are not being supplied adequately with shut-off and regulating apparatus, monitoring and measuring instruments, production and machine-tool equipment, road-construction machinery, lifting mechanisms and automotive

transport. All these problems must be resolved as rapidly as possible, and we shall apply all our efforts to this end.

Ahead lies major work to improve the republic's gas services. New gas-dispensing stations are to be built at the Aksenger Railroad Yard of Alma-Atinskaya Oblast, gas-dispensing stations for liquefied gas are to be rebuilt at Semipalatinsk and Ural'sk, and rebuilding of the GRS's [gas-dispensing stations] at Karaganda, Kzyl-Orda, Gur'yev and Ust'-Kamenogorsk is to be completed. This will enable these stations to increase their capacity to 400,000 tons per year and to greatly improve supply to the populace.

Also to be built during the 11th Five-Year Plan are a motor pool for 250 vehicles in Alma-Atinskaya Oblast, operating bases for gas services in all oblast centers, and places for the exchange of tanks in rayons. These measures will greatly improve the delivery of liquefied gas. The Amangel'dinskoye and Ayraktinskoye gas fields will be introduced into development, and a second strand of the gas pipeline from Chimkent to Alma-Ata will be erected. This will enable delivery of the blue fuel to customers of the republic's southern oblasts to be stabilized.

In greeting the vocational holiday, the republic's gas workers are filled with resolve to fulfill successfully the plans for 1981 and to drive still more persistently for a further rise in operating effectiveness and the use of reserves and the elimination of deficiencies in the work, thereby making a worthy contribution to the fulfillment of 26th CPSU Congress decisions.

11409

CSO: 1822/3

FUELS

NATURAL GAS USED INCREASINGLY IN LITHUANIA

Vilnius SOVETSKAYA LITVA in Russian 6 Sep 81 p 2

[Interview with Ch. Krukauskas, chief of the Main Administration for the Installation of Gas Services under the Lithuanian SSR Council of Ministers, by L. Maslyakov: "Great Plans, Responsible Tasks"]

[Text] Each year the importance of gas in the country's fuel balance and in satisfying the municipal and household requirements of the people increases. The 26th CPSU Congress emphasized once again the necessity for expanding its use in the national economy. The republic's gas installers, who are this year observing the 25th anniversary of their system, are doing great work in this area. On the eve of the vocational holiday of oil and gas industry workers, SOVETSKAYA LITVA correspondent L. Maslyakov met with chief of the Main Administration for the Installation of Gas Services under the Lithuanian SSR Council of Ministers Ch. Krukauskas and asked him to answer some questions.

Correspondent: Twenty-five years of the collective of the republic's gas installers is a good occasion for taking a look at the road that has been traveled, to weigh what has been done....

Ch. Krukauskas: You do not tell all about it, the work that has been done is great. Thus, 823,000 apartments have had gas installed. This is almost all the apartment houses in the republic. Gas arterials have been laid to 22 cities and urban-type settlements. Gas is used in the most varied branches of the economy. It is being used by 180 large industrial and power enterprises and several thousand municipal and domestic services organizations that serve the populace. It is helping enterprises to improve economic indicators at work. For example, it is the use of gas that has enabled the collective of Ionava's Azot production association to cut prime production costs for ammonia by almost two-thirds.

Correspondent: The reader would be interesting in finding out what technical innovations have been introduced in gas services.

Ch. Krukauskas: Right now we face the problem of making more intensive use of gas pipelines. In solving this it was necessary to raise the pressure in the lines and

to insure safety in the transporting and use of gas. Complexes for remote control which are being created and which are intended for combining a unified automated system with the use of computer equipment will help here. New models of instruments for detecting gas leaks will help to raise the level of safety in the transporting and use of gas.

Correspondent: Cities and large industrial enterprises have been supplied with gas—we know this. But how are matters going in the village?

Ch. Krukauskas: Right now the republic's gas installers are placing the main stress in their work on developing gas pipelines that go to large agricultural production facilities—livestock complexes and hothouses. Our efforts have been concentrated on solving problems associated with the efficient use of gas for drying grass and for producing grass meal. However, it should be said that the development of gas pipelines in the village is being slowed by inadequate operating capacity on the part of construction organizations. Each year they fail to carry out the contemplated plans.

Correspondent: A major work program for saving and making rational use of the country's material resources, including gas, was contemplated in a CPSU Central Committee and USSR Council of Ministers decree that was adopted 2 months ago. What is being done in this area by the republic's gas installers?

Ch. Krukauskas: Not so long ago we were concerned mainly about providing, as much as possible, for the wider use of gas. The conversion to gas fuel itself has yielded great advantage to the national economy. Now the problem is being complicated: it is necessary to provide not simply for the wide use of gas, but, without fail, for the more economical and rational use of it. Because of this, a great responsibility has been laid on the specialists of our tune-up administration. Their job is to so adjust fuel units that are converted to gas that they consume less fuel with greater benefit. And it must be said that the enterprise's workers are coping with this.

At present the first models of automated modular burners which have been developed jointly by Soviet and Czech specialists are being tested in the republic. With their help, the combustion process is being regulated automatically, without man's participation. Scientific staff workers of the Kaunas Polytechnical Institute imeni Antanas Sniechkus have determined that in Kaunas alone factory use of such burners will enable gas consumption to be cut 15-20 percent. Incidentally, a scientific and technical conference which met in Vilnius this past Thursday, in which prominent specialists of our country and other countries of socialist collaboration took part, was dedicated to questions of saving and making rational use of gas fuel.

Correspondent: Statements about the desirability of converting motor vehicles to gas fuel are being encountered increasingly in the press. What is your opinion on this question?

Ch. Krukauskas: I consider this an important and promising matter. Right now about 300 trucks in the republic, mainly in Vilnius and Kaunas, are operating on liquefied gas. They pollute the air much less. The number of such vehicles will increase.

Correspondent: Tell me, please, about the plans of the republic's gas installers for the 11th Five-Year Plan.

Ch. Krukauskas: They have already been defined. It is planned to hook up Plunge, Gargzhday, Radvilishkes, Pasvalis and other cities and a large number of agricultural facilities to trunk gas pipelines. Thus a large hothouse installation at Neveronis, near Kaunas, the Kuzhyay production complex in Shyaulyayskiy Rayon, the Pavasaris Kolkhoz of Pasval'skiy Rayon, and so on, will receive natural gas in the near future. Still another gas-dispensing station will be constructed.

The plans are big, and the jobs are important. And there can be no doubt that they will be carried out. The labor and creative potential of the gas-installers' collective is a guarantee of that. The communists, veterans and workers who today are marking 25 years of operation of our system will determine its strength. Among them I would like to single out especially mechanic Yu. Mikolayevich and driver Ivan Iznov from the Vilnius Production Administration, mechanic A. Yurkyavichyus from Kaunas, Yu. Dolmant from Shyaulyay and others. Such people are our support, and the whole collective seeks to emulate them.

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CSO: 1822/3

FUELS

AZERBAIJAN FIGHTS OILWELL WATER ENCROACHMENT WITH REFINERY EFFLUENT

Baku VYSHKA in Russian 5 Sep 81 p 2

[Article by S. Seidov, chief geologist of the Kirovneft' [Kirov Oil Recovery Association] NGDU [oil and gas recovery administration], and Ye. Zhirnov, chief engineer of AzNIPIneft' [Azerbaijan Scientific-Research and Design Institute for the Oil Industry]: "The Results of One Experiment"]

[Text] Definite successes have been achieved recently in the area of developing oil fields and the technology for recovering oil from the republic's ground. Nevertheless, the problem of extracting to the maximum the remaining fuel from the ground in old areas continues to be urgent.

One of the factors that limits the completeness of withdrawal of oil from the formation is the breakthrough of water at the well face. Formation water prevents the entry of crude and this, in the final analysis, leads to a sharp reduction in well flow, and in some cases to full water encroachment thereat. This takes place especially at the Apsheron fields, which are in a late stage of development. It is completely understandable that the drive to limit water influx to the wells was and still is a component part of the overall oilfield operation that is aimed at stabilizing the recovery of hydrocarbon raw materials.

However, the large amounts of plugging with cement and foam cement that have been performed in Azerbaijan have not produced the desired effect. Thus, during 1970-1980, the Leninneft' NGDU performed insulating operations in 363 wells, including cement plugging on a water base in 306, but only 35 percent of them proved to be effective. During that same time, the restriction of water influx with foam-cement solutions was used in 46 wells, and, in this case, the effectiveness was 40 percent.

The causes of the low effectiveness of the work performed were the limited mobility of the plugging solution and poor adhesion of the hardened cement with the rock and of the metal of the casing with the old hardened cement. In this case, the cement plugging stopped up not just the water targets but also the fissured rock of the oil-bearing formation, which in many cases degraded its permeability. This is why the search for effective means for restricting water encroachment of wells has been an important task in the area of oil recovery, a positive solution to which scientific workers have been seeking in close collaboration with recovery workers.

Important achievements in this area have already been noted. A group of AzNIPIneft' scientific workers developed a new, selectively acting chemical composition based upon petroleum-refinery enterprise effluent. The first industrial-test operations to isolate the influx of water were executed at well No 51, which is situated in the Siyan-Shor section of the Kirovneft' NGDU. The results surpassed expectations. Well flow rose from 0.7 to 2.6 tons of crude, and, in so doing, water withdrawal was reduced 3-fold to 4-fold. Well No 24, which was almost completely water encroached, is pumping just as much clean crude. After similar measures, well No 51 at the Masazyr area is operating with a flow of 2 tons of oil.

The results of the experiment were good. In all, the isolating work with use of the new chemical compound was performed at 10 wells at the Kirovneft' NGDU. The total flow thereat is almost 4-fold the former withdrawal of fuel. Similar operations were also carried out with success, but in a lesser amount, at the Leninneft' and Ordzhonikidzeneft' NGDU's.

Here are the results of the experimental industrial tests: total average daily flow of crude rose 5-fold, and entry of water to the wells was reduced to one-seventh to one-eighth. In so doing, an extension of the time between the repair of wells was observed. Four thousand tons of oil have been recovered from 23 wells, and the discharge of formation water has been cut by 25,000 cubic meters.

It should be emphasized that use of oil-refinery effluent as a reactant enables one of the most important tasks of the national economy, that of preserving the environment, to be solved.

The good results of the experiment served as a foundation for expanding the industrial testing. Right now the institute, jointly with Azneft', is planning to do insulating work, using the new chemical reactant, in the NGDU imeni 26 Bakinskikh Komissarov, at Karadagneft' and Muradkhanlyneft'.

Right now the institute is preparing for tests of still another innovation. This is a special chemical composition based upon road tar, for the development of which a group of scientific staff workers of AzNIPIneft' have already received an author's certificate upon application. The new chemical reactant, it goes without saying, will enable oilfield workers to solve more effectively the tasks that have been set for them.

11409

CSO: 1822/3

FUELS

STRICT FUEL CONTROL IN BELORUSSIAN AGRICULTURE SOUGHT

Moscow SEL'SKAYA ZHIZN' in Russian 22 Sep 81 p 2

[Article by A. Sloboda, deputy Chairman of the People's control committee for the Belorussian SSR: "The Thrifty Eye of a Controller"]

[Excerpts] One of the chief problems in the work being performed by the people's controllers of Belorussia is that of efficient use of oil products in the rural areas. And this is quite understandable. Agriculture consumes roughly one half of the entire amount of motor fuel used in the republic -- 12-20 percent of the production costs for motor vehicle and tractor operations involved expenses for procuring fuel and lubricating materials. The republic committee prepared special leaflets and recommendations, it approved methods for preserving and ensuring efficient use of fuel and lubricating materials and these were all used by people's controllers in Slutskiy Rayon in Minskaya Oblast and in Berezovskiy Rayon in Brestskaya Oblast.

Each year we summarize the results of inspection teams and checks carried out in the various areas. In a majority of the rayon committees, the problems concerned with the storage and expenditure of oil products are examined repeatedly. The people's control groups created special posts at oil bases, in tractor brigades and in repair workshops.

The people's controllers are furnishing assistance in finding reserves for achieving fuel economies and in employing more improved forms for establishing norms and accounting for the oil products. During the years of the past five-year plan, with the active assistance and participation of people's control, 310 standard warehouses for the storage of fuel and oils and more than 1,400 refueling stations were built and placed in operation on farms throughout the republic. In addition, substantial improvements were achieved in technical services for the vehicle and tractor pool. And as a result, a reduction has taken place over the past 5 years in diesel fuel consumption for field and transport tractor operations throughout the republic. Last year it amounted to 7.6 kilograms per standard hectare. The kolkhozes and sovkhoses realized a savings of 35,800 tons of diesel fuel, the motor transport establishments of Goskonsel'khoztekhnika for the BSSR -- 2,400 tons of gasoline and the associations of Belsel'khozkhimiya -- 4,600 tons of diesel fuel and 1,600 tons of gasoline.

For the second year in a row, the best results in organizing the campaign to achieve rational use of fuel and lubricating materials were realized by the people's

controllers in Brestskaya Oblast, the farms of which last year reduced their diesel fuel consumption, compared to the norm, by 5,600 tons and gasoline -- by 480 tons. Highly effective inspections were carried out by the people's control committees and groups in Zhabinkovskiy, Luninetskiy, Lyakhovichskiy, Berezovskiy, Brestskiy, Ivanovskiy and Pinskiy Rayons.

The people's patrols in Minskaya Oblast are exercising purposeful and persistent control over the rational expenditure of fuel. Last year alone, they carried out more than 1,000 inspections, checks and reviews. Effective assistance in combating losses in oil products is being furnished by people's control groups and posts at the kolkhozes imeni Timiryazev, Pervoye Maya, Novyy Svet and Rodina and at the Lesnoye Sovkhoz in Kopyl'skiy Rayon, Minskaya Oblast. Here, over the course of a year's time, savings of 5-6 percent in diesel fuel and 4-5 percent in gasoline were realized.

At the same time, the checks reveal that the fuel and lubricating materials are not being employed in a thrifty manner on a number of farms and that considerable losses are occurring due to mismanagement. The best results are found in those areas where the servicing and repair of the oil warehouses of kolkhozes and sovkhozes are being carried out by specialized brigades of Sel'khoztekhnika. They supply the fuel on a centralized basis using their own transport. At the present time, 99.5 percent of the kolkhozes and sovkhozes in Belorussia are already being serviced in this manner. They have 2,928 oil storage depots, including 1,187 of the standard type, more than 40,000 tanks representing an overall capacity of 550,000 cubic meters and approximately 9,000 refueling stations. Traveling brigades of mechanics have been created in all rayons throughout the republic for servicing the oil bases of Goskomsel'khoztekhnika for the BSSR. They have been provided with the required devices, equipment and instruments and 105 of the brigades have units for the washing and cleaning of the tanks.

Beyond any doubt, the volumes of preventive maintenance and repair work have increased considerably. However, there is a shortage of motor vehicle workshops and measuring tanks. Only 30 percent of the requirements for spare parts, required for carrying out repair work, are being satisfied. One of the reasons for the over-expenditures of gasoline and oil is the fact that a considerable number of the kolkhoz and sovkhoz motor vehicles have exceeded their normal service life.

Large amounts of fuel are still being burned in the furnaces of generators and boilers and the sound norms for fuel consumption are being violated and also the system for planning and distributing the fuel and lubricating materials. The quantity of fuel declared is not always in agreement with the volume of impending work or with the achieved indicators for its consumption.

In short, it is too early for the people's controllers to rest on their laurels. To the contrary, control must be even more strict and comprehensive.

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CSO: 1824/09

FUELS

OIL WELLS RUIN VALUABLE FARMLANDS

Kiev RADYAN'SKA UKRAYINA in Ukrainian 15 Aug 81 p 2

[Article by V. Kaplun, chief, Poltavskaya oblast inspectorate of natural conservation]

[Text] Two decades ago in the Poltava forest-steppe landscape oil and gas field towers timidly emerged for the first time. Today underground stores are being intensively searched for and opened up to production on large areas. On the territory of the oblast extensive work is being done on the surveying and acquisition of oil and gas by such large production units as "Poltavnaftogaz" and the "Ukrskhidnaftogasbud" trust. One of the powerful associations of the republic, "Poltavnaftogazgeologiya" has disposed its subdivisions on the lands of Poltavskaya, Sumskaya, Dnepropetrovskaya, Khar'kovskaya and Kirovogradskaya oblasts.

All the producing units of the region must be given their due: they are working under complicated conditions, and so there is considerable to be done to accelerate the drilling of oil wells, that is, they contribute to a more intensive acquisition of fuel. In this important matter not all is well in the treatment of land resources. On farmlands where oil wells grow thickly like mushrooms after a rain, an arrangement not always ideal.

In our time, when each hectare of land has to be used with the greatest yield in order to provide the population with products of agriculture more plentifully, one cannot help but consider natural conservation requirements with respect to farmlands. Unfortunately, fertile lands temporarily used by geological survey expeditions are not always returned to the farms the same as they were.

To provide for only one oil well, local farms allocate almost four hectares of chernozem to oil and gas organizations. In the Poltava area alone the "Poltavnaftogazgeologiya" Association has close to 300 hectares. The local gas-field administration has 815 hectares of fertile lands for its use. Actually, two producing units occupy territory on which crop rotation of an average Poltava farm can be disposed.

How do the gas and oil organizations manage these lands? Let us say it directly: not very well.

In 1979, for example, work was halted on a four-hectare section of the "Vyrishal'-nyy" sovkhos of Lokhvitskiy rayon by the services of the Myrgorod deep drilling

office, headed by M. Kundenko. They have not hurried there to recultivate the land and transfer it to the farm. Installations, various hardware and a large quantity of chemicals were left on that section until March 1981. Even a 50-meter tower was not dismantled.

Perhaps this was a coincidence? No. At a number of other oil wells of various expeditions of "Poltavnaftogasgeologiya" it is possible to observe a more cheerless picture. Here, for example, is how natural conservation requirements are discharged at operating oil well No 407, on the lands of the kolkhoz imeni Makarenko of Poltavskiy rayon by the Karlovskaya deep drilling expedition. When the oil well was drilled and the base installed there nothing at all was known about the fertile layer of soil, how it was composed or what planning was required. It was flooded and soiled with technical waters containing large admixtures of petroleum products on 15 hundreds (units) of protective forest zone. As a result nearly 70 standard trees were ruined. Oil poured over a territory of 2.5 hectares.

Very similar damage was permitted at oil wells of the Opishnyanskaya deep drilling expedition. Worse than that, the leaders of those services did not pay attention to written warnings of the oblast natural conservation inspectorate; it was necessary to make use of a not quite pleasant sanction--to prepare reports to deprive them of bonuses.

Thanks to very strict monitoring of natural conservation services of the geological survey subdivision have begun to engage very seriously in the recultivation and restoration of the land made available to them temporarily by the farms. However, far from everything has been done. One of the main problems, one still unsolved, is that of burying spent chemicals.

The need for chemicals is extremely large. For oil-well drilling to a depth of 5000 meters (in the Poltava area mainly to the depth at which survey work is done) nearly 100 tons of polyethylene powder, 43 tons of ferrous sulfate and 487 tons of calcined soda are required. It is not by chance that I cite such high figures. Part of these costly chemicals, in accordance with the technology, will be used and buried in the depths of the earth. And yet a considerable quantity of the compounds remains on the surface and becomes dangerous for the surrounding environment. Producers still do not have special transport for shipments of chemicals for various reasons not used by drillers, and so the chemicals either are burned in pits or simply left to the mercy of the winds and rain. There is work here for the republic Ministry of Geology and its branch scientific research subdivisions.

Everyone knows that the land is our joint wealth, and so we are jointly obliged to take care of it, not divide it but share it with fruitful effort.

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CSO: 1811/3

FUELS

BRIEFS

TATARIYA OILFIELD PERFORMANCE--Oilfield workers of the Aktyubaneft' Oil and Gas Recovery Administration have sent 8,390 tons of "black gold" above plan to the country's refineries since the start of this year. They thereby made a meaningful contribution to the most rapid recovery of the 2-billionth ton of crude oil. The administration's collective achieved high indicators in socialist competition, thanks to the coordinated work of the oil-recovery workers, the brigades for underground repair of wells, and the drillers. In 5 months of this year alone the earth-drillers turned over 37 new wells. This has enabled the oilfield workers to maintain a high pace and a precise rhythm of crude recovery. In the drive to recover crude oil above the plan and to raise the effectiveness and quality of the work, the oilfield collectives under A. Solin and K. Sungatullin made a great contribution. [D. Grigor'yev] [Text] [Kazan' SOVETSKAYA TATARIYA in Russian 23 Jun 81 p 1] 11409

KIRGHIZ OIL-RECOVERY PROGRESS--The collective of the Kirgizneft' production association is greeting its occupational holiday with splendid labor successes. The plan for the first 8 months of the year for recovery of liquid fuel and gas was carried out ahead of time. Recovered above the plan were 1,360 tons of oil and more than 3 million cubic meters of natural gas. The collectives of the Izbaskent and Chanyr-Tash oilfields and of Gas Department imeni 25th CPSU Congress distinguished themselves during the labor drive. They coped successfully with their tasks. Oil and gas recovery operators D. Yunusov, S. Tashatov, S. Moldaliyev, P. Akchabayev, V. Grishantsev, I. Satayev, N. Yertzov and many others were in the vanguard of the competition. Progressive methods for intensifying recovery--hydraulic fracturing of the formation and alkali-cement-acid, oil-acid and thermochemical treatment of the well's bottom zone--are helping in the success. These have enabled an additional 849 tons of "black gold" to be taken from the ground. Almost all the old fields are being developed by reservoir-pressure maintenance methods. This is being achieved by pumping water into the productive horizons under high pressure. The recovery of crude has grown by more than 40,000 tons since the start of the year. The oilfield workers are paying much attention to introducing new equipment and technology. The casing of wells with welded casing and drilling with jet bits are being used increasingly widely. The association has high-powered drill rigs at its disposal for sinking deep wells, on the order of 4,450 meters. [P. Khramov] [Text] [Frunze SOVETSKAYA KIRGIZIYA in Russian 6 Sep 81 p 1] 11409

TATARIYA OIL-WELL OVERHAULING--Aznakayevo--The collective of the Aznakayevo Administration for Raising Oil Recovery and for Well Overhaul has returned 412 wells to operation since the start of the year. This success has been achieved thanks to

the skills of the people and the broad scope of the competition for the most rapid recovery of the 2-billionth ton of crude. Simply by raising overhaul effectiveness, the collectives of the Aznakayevskneft', Aktubaneft', Suleyevneft' and Dzhalil'neft' administrations recovered an additional 10,600 tons of crude. The brigade of foreman Sh. Nigmatzyanov shows high skill in its work. It was the first in the administration to carry out ahead of time the task for the first 5 months of the year. Since the start of the year, the advanced collective has repaired 17 wells instead of the 14 planned. The brigades of foremen G. Khabibullin, I. Nurmu-khametov and S. Safin are restoring wells in shockwork-like fashion. [G. Dudnik] [Text] [Kazan' SOVETSKAYA TATARIYA in Russian 5 Jun 81 p 1] 11409

HIGH-FLOW URENGOY WELL--Novyy Urengoy, Tyumenskaya Oblast--The daily recovery at the celebrated Urengoy is growing. A high-flow well drilled above the plan by the brigade of foreman G. D'yachenko from the arctic expedition has gone into operation. The high-capacity bore is capable of yielding daily more than 1 million cubic meters of the blue fuel. The drillers do not select the next wells: a scientifically substantiated chart for assimilating the gas deposits names them. [TASS] [Text] [Moscow IZVESTIYA in Russian 21 Aug 81 p 3] 11409

TURKMENIA'S ELECTRIC-POWERED RIGS--Ashkhabad--Drillers of the Turkmengazprom industrial association do not need to import expensive diesel fuel now for their rigs: they have been converted to electric power. The first mobile gas-turbine station with a capacity of 2,500 kilowatts already is operating and producing current for the drill rigs. The power unit works on inexpensive local natural gas. Five more such gas-turbine power stations will be put into operation at the republic's richest natural gas fields in the near future. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 19 Sep 81 p 1] 11409

DZHALIL' OIL RECOVERY--Dzhalil'--Since the start of the year the collective of the Dzhalil'neft' Administration has recovered more than 5 million tons of "black gold." Being the largest oil and gas recovery enterprise of Tatneft' Association, the administration is making a worthy contribution to the recovery of the 2-billionth ton of crude. This year alone Dzhalil' workers have extracted from the ground more than 15,000 tons of liquid fuel above the plan. A drive is on at the administration's fields for the effective use of the well inventory, and new capacity for oil recovery is being introduced at an outstripping pace. This year alone more than 50 new wells have been drilled, completed and introduced into operation. Eighteen water-injection wells have been assimilated. [Text] [A. Maksudov] [Kazan' SOVETSKAYA TATARIYA in Russian 4 Jul 81 p 2] 11409

GDR-DESIGNED TREATMENT PLANTS--The combine for chemical machinebuilding in Grimm, close to Leipzig, has undertaken to fulfill a new and important order. Its design bureaus are developing a design for steel structure for gas and oil treatment stations. Twenty such base stations will be erected in the next few years by GDR specialists in the Komi ASSR, within the Arctic Circle. Products of the Grimm enterprise have proved themselves well in the USSR's various climate zones. Thus, at the end of last year the plant sent a large lot of oil-treatment installations to Tyumen' oilfield workers. [Text] [Tallinn MOLODEZHI ESTONII in Russian 14 Aug 81 p 3] 11409

TATARIYA OIL MILESTONE COMPETITION--Oilfield workers of the Tatneft' Association have overfulfilled the oil-recovery task for the first half of the year. Socialist competition for the recovery of the second-billionth ton of oil since the start of

development has been promoted at the autonomous republic's oilfields. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 31, Jul 81 p 3] 11409

TOMSKAYA FIELD YIELDS OIL--The Pervomayskoye Field in Tomskaya Oblast has yielded its first hundreds of tons of oil. This is the first of six new natural fuel storehouses that will be put into operation during the five-year period. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 31, Jul 81 p 3] 11409

AZERBAIJAN DEEP HOLE PROGRESS--Saatly (Azerbaijan SSR), 7 Sep--The first operating step has been completed on the 15-kilometer well that is being sunk in Azerbaijan. Today the oil-exploration expedition discovered a formation that is 7,500 meters from the surface. The bit of the Azerbaijan drillers had not penetrated the earth this far before. The well is being drilled in the Kura depression, close to the steppe town of Saatly, where, according to the geologists' prognoses, the earth's crust is thinner than in other parts of the country and can be "bored" down to its lowest layers. Only half of the 15-kilometer path has been traveled, but the data obtained has already brought certain corrections to the scientists' notions about the earth's structure in this region. The temperature in the well turned out to be lower than had been expected. This gave the scientists reason to hypothesize that magmatic activity in this area is lacking at present. Industrial reserves of fuel have not been encountered yet on the hole's path, although reef limestones with vast hollows, very convenient for the deposition of oil and gas, can be indicators for further exploration. [TASS correspondent A. Gol'denberg] [Text] [Moscow TRUD in Russian 8 Sep 81 p 1] 11409

AZERBAIJAN DEEP HOLE LIMESTONE--Saatly (Azerbaijan SSR), 12 Sep--The bit has reached 7,500 meters in the 15-kilometer hole that is being sunk in the Mugan steppe. Highly productive, powerful domestic equipment has helped to reach ahead of time a depth which is unusual for Azerbaijan drillers. Study of the rock that has been drilled out testifies that limestones with great hollows, convenient for the deposition of oil and gas, can be indicators for industrial prospecting. [L. Tairov] [Text] [Moscow PRAVDA in Russian 13 Sep 81 p 6] 11409

VYNGAPUR GAS RECOVERY--Vyngapurgazdobycha [Vyngapur Gas-Recovery Administration] is a new administration in the gas industry of the far north of Tyumenskaya Oblast. Its labor biography is still just beginning. But already the first steps have been taken with complete confidence and success. During the last five-year plan 600 million cubic meters above the established plan have been sent over large-diameter pipeline to the country's industrial regions. The young quickly growing collective of the Vyngapurgazdobycha Administration has resolved to carry out the task of the new five-year plan by 7 November 1985 and to give 4 billion cubic meters of the North's natural gas above the plan. Vyngapur's oilfield workers are proceeding from the start of the current year with a substantial lead over the schedule. They have to their credit hundreds of millions of cubic meters of the valuable blue fuel above the plan. Six times they have emerged winners in All-Union competition. [Text] [Moscow IZVESTIYA in Russian 16 Sep 81 p 1] 11409

AL'MET'YEVSK OILFIELD WORKERS COMPETE--Al'met'yevsk--Oilfield workers of the Order of Lenin Oil and Gas Recovery Administration Al'met'yevneft' have undertaken a noteworthy goal in the socialist competition for the right to take part in the recovery of the 2-billionth ton of "black gold." Since the beginning of this year they have already recovered 6 million tons of oil. Including 19,000 tons above the plan. The contribution of the Al'met'yevsk oilfield workers to the recovery of the

2-billionth ton of crude oil impresses. According to the specialists' estimates, it is more than 446 million tons of liquid fuel. These days the collectives of many oilfield workers' brigades of advanced enterprises of the Tatneft' Association are greatly surpassing daily tasks for taking crude from the earth. [A. Mannanov] [Text] [Kazan' SOVETSKAYA TATARIYA in Russian 4 Jul 81 p 2] 11409

MODULAR OILFIELD FACILITIES--The mobile Tatkomplektmontazh [Trust for the Installation of Complete Sets of Equipment in the Tatarskaya ASSR], which was established less than 1½ years ago within Tatneftestroy [Tatarskaya ASSR Association for the Construction of Oil Industry Facilities], is becoming stronger and is gathering speed. Right now its collective is working successfully on the construction of high-capacity compressor stations on the Urengoy-Peregrebnoye-Nizhnyaya Tura-Petrovsk, Gryazovets-Moscow District Gas Ring, and Komsomol'skoye-Surgut-Chelyabinsk trunk gas pipelines and on building up the republic's oilfield facilities. In the first year of the 11th Five-Year Plan more than half of the construction and installing work was performed by cost-accounting brigades, the labor productivity of which is 10-15 percent higher than in other collectives. Facilities are being erected by the progressive outfitted-module method. Chief of the Specialized Administration for the Manufacture of Box Modules F. Fakhrullin and Chief Engineer N. Nesterov have improved the design of the outfitted-module arrangements. This has enabled the degree of factory fabrication of the product to be brought up to 85 percent, labor expenditure to be halved, and the transporting of the boxes to the place of their erection to be greatly simplified. Moreover, each outfitted-module arrangement saves about 700 kilograms of metal. Today 60 box modules of new design have been produced for Tataria's oilfields. These have saved the enterprise about 120,000 rubles. This year the trust will begin to build flow stations on the Perm'-Al'met'yevsk oil pipeline. [V. Kirchanov] [Text] [Kazan' SOVETSKAYA TATARIYA in Russian 5 Jun 81 p 2] 11409

TATARIYA PROSPECTING DRILLING--Al'met'yevsk--Explorers of the underground of the Al'met'yevsk Geological Prospecting Office have achieved great labor successes in the competition to recover the 2-billionth ton of oil. The brigades of structural drilling foremen P. Timofeyev, Z. Sadykov, S. Kharisov and A. Kondrat'yev have reported for the first time fulfillment of the plan for the first half of the year ahead of schedule. Each of these collectives has surpassed the 8,000 target for rock penetration. Prior to the end of the month the explorers of the underground will drill thousands of meters of prospecting hole above the plan. [A. Mannanov] [Text] [Kazan' SOVETSKAYA TATARIYA in Russian 17 Jun 81 p 2] 11409

AZERBAIJAN GAS PIPELINE OPERATIONS--About 3 million cubic meters of natural gas have been pumped to the fraternal republics of the Caucasus since the start of the year by the collective of the Kazi-Magomed Pipeline Operations Administration of Aztransgaz [Azerbaijan Trunk Gas Pipeline Transport Association]. The administration's workers overfulfilled the task for the first 7 months of the year. This success was achieved by providing for stable operation of all the gas pumping stations, executing in good time the required preventive maintenance measures. As a result, the operational readiness of the equipment has been brought up to unity, which practically excludes interruption in operation of the gas compressor units. The socialist competition widely developed among sections and services under the slogan, "Each unit to provide reliable service," also helped the collective's success. The collective of the Electrochemical Protection Service, which is managed by engineer Dal'baz' Makhmudov, leads the labor rivalry. Electrical welder Agak-erim Kerimov, electrical installer Bakhtiyar Kagramanov, mechanic Tofik Alekperov,

battery worker Aleksandr Ruslyakov, and many others are working assiduously and conscientiously. [O. Akperov, machinery operator of a gas compressor station of Kazi-Magomed Administration of Aztransgaz. [Text] [Baku VYSHKA in Russian 22 Aug 81 p 1] 11409

TATARIYACASING-HEAD GAS--The first billion cubic meters of casing-head gas recovered at Tataria's oilfields--52 million cubic meters of it above plan--have been received at operations installations of the Minnibayevo Gas-Processing Plant. The Minnibayevo gas-treatment workers have sent 27,000 additional tons of valuable hydrocarbon raw materials and 7,000 tons of ethane to the republic's petrochemical workers since the start of the year. Forty million cubic meters of the blue fuel have been sent to industrial enterprises and the populace. [A. Mannanov] [Text] [Kazan' SOVETSKAYA TATARIYA in Russian 16 Jun 81 p 1] 11409

TATARIYA'S WELL OVERHAULERS--The well-overhaul brigade managed by USSR State Prize winner Anas Abdullin, having overhauled 23 oil wells, has carried out the plan--and more--for the first 7 months of the year. Having headed the repair-workers' competition, the advanced collective of the Al'met'yevsk Administration for Increasing Oil Flow and for Well Overhaul has committed itself to carrying out the annual plan by the day the 2-billionth ton of oil is recovered from the republic's earth. Today the brigade has to its credit 7 oil-well overhauls above the plan. [A. Mannanov] [Text] [Kazan' SOVETSKAYA TATARIYA in Russian 16 Jun 81 p 1] 11409

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